

CLAIMS:

1. A supplementary visual display system (10, 200) for use in conjunction with a display device (40) including an image display region (50) for presenting images to a viewer (15), the system (10, 200) comprising:

(a) one or more illumination sources (100a, 100b, 110, 120) disposed in a configuration at least one of :

(i) at least partially peripherally surrounding the image display region (50); and
(ii) arranged to project illumination radiated therefrom so as to illuminate a region visually appearing to the viewer (15) to at least partially peripherally surround the image display region (50);

(b) monitoring means for monitoring at least one of:

(i) audio program content; and
(ii) intensity and/or color and/or depth information in the entire image display region (50) or in one or more sub-regions (300, 310, 320, 330) of the image display region (50) when images are presented thereon,

and generating corresponding image and/or audio indicative signals; and

(c) controlling means (500) for controlling light radiation emitted in use from the one or more illumination sources (100a, 100b, 110, 120) in response to the image and/or audio indicative signals so as to provide at least a partial spatial extension of the image display region (50).

2. A visual display system according to Claim 1, wherein the monitoring means and the controlling means (500) are arranged such that the one or more illumination sources (100a, 100b, 110, 120) in conjunction with the monitoring means and controlling means (500) are operable to respond to at least one of color and intensity and depth information presented in sub-regions of the image display region (50) substantially spatially adjacent to where the one or more illumination sources (100a, 100b, 110, 120) are either mounted in respect of the image display region (50) or arranged to project light radiation emitted therefrom as perceived by the viewer (15).

3. A visual display system according to Claim 1, wherein the one or more illumination sources (100a, 100b, 110, 120) in conjunction with the monitoring means and the controlling means (500) are operable to at least partially mimic at least one of color and intensity and depth information in sub-regions of the image display region (50) spatially adjacent to at least one of:

- (i) where the one or more illumination sources (100a, 100b, 110, 120) are mounted in respect of the image display region (50); and
- (ii) where the one or more illumination sources (100a, 100b, 110, 120) are arranged to project their illumination as perceived by the viewer (15).

4. A visual display system according to Claim 1, wherein the controlling means (500) is arranged to energize the one or more illumination sources (100a, 100b, 110, 120) in response to program content presented on the image display region (50) in a temporally delayed manner.

5. A visual display system according to Claim 4, wherein the temporally delayed manner of control has a temporal response associated therewith, the controlling means (500) being arranged to render the temporal response dynamically variable as a function of program content presented on the image display region (50).

6. A visual display system according to Claim 1, wherein the one or more illumination sources are susceptible to being selectively user-deactivated.

7. A visual display system according to Claim 1, wherein the one or more illumination sources are disposed in one or more illumination panels (100a, 100b, 110, 120) disposed at least one of laterally, above and below the image display region (50) when the display region (50) is disposed in a substantially upright orientation in operation.

8. A visual display system according to Claim 7, wherein at least one of the one or more panels (100a, 100b, 110, 120) includes a plurality of groups of sources (400, 430; 410, 420) of illumination with light diffusing means spatially interposed therebetween for causing in use a more gradual color and/or intensity and/or depth information transition between the groups of sources (400, 430; 410, 420).

9. A visual display system according to Claim 7, wherein the display device (40) is a wide-screen television set with the one or more panels (100a, 100b) disposed laterally in respect of the image display region (50) and/or arranged to project their illumination substantially laterally as perceived by the viewer (15).

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10. A visual display system according to Claim 1, wherein the one or more illumination sources (100a, 100b, 110, 120) are susceptible to being added to the display device (40) as one or more retrofit components.

10 11. A visual display system according to Claim 1, wherein the display device (40) is a television set.

12. A visual display system according to Claim 1, wherein the monitoring means and the controlling means (500) are arranged to energize the one or more sources of
15 illumination (100a, 100b, 110, 120) in response to ambient conditions pertaining to the display device (40) as well as in response to program content presented on the image display region (50).

13. A visual display system according to Claim 12, wherein the monitoring means
20 and the controlling means (500) are arranged to energize the one or more sources of illumination (100a, 100b, 110, 120) such that those sources spatially adjacent to the image display region (50) are arranged to provide at least a partial extension of program content presented on the image display region (50) and those sources spatially more remote from the image display region (50) to blend in with the ambient conditions.

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14. A visual display system according to Claim 1, wherein the display device (40) is adapted as a display device capable of displaying two-dimensional images.

15. A visual display system according to Claim 14, wherein the monitoring means
30 is adapted to determine the depth information from two-dimensional image data related to two-dimensional images to be presented on the display device (40).

16. A visual display system according to Claim 1, wherein the display device (640) is adapted as a display device capable of displaying three-dimensional images.

17. A visual display system according to Claim 16, wherein the monitoring means is adapted to determine the depth information from three-dimensional image data related to three-dimensional images to be presented on the display device (640).

18. A visual display system according to Claim 17, wherein the monitoring means is adapted to determine the depth information from meta data forming a part of three-dimensional image data related to three-dimensional images to be presented on the display device (640).

19. A visual display system according to Claim 1, wherein the monitoring means is adapted to generate image indicative signals corresponding to the depth information in such a manner that a location at which the one or more illumination sources (100a, 100b, 110, 120; 730) emit light radiation is correlated with a location of at least one object displayed on the image display region (50).

20. A visual display system according to Claim 1, wherein the monitoring means is adapted to generate image indicative signals corresponding to the depth information in such a manner that color and/or brightness and/or intensity of light radiation emitted by the one or more illumination sources (100a, 100b, 110, 120; 730) is correlated with a location of at least one object displayed on the image display region (50).

21. A visual display system according to Claim 1, wherein the one or more illumination sources (100a, 100b, 110, 120) are provided in a movable manner, and wherein the monitoring means is adapted to generate image indicative signals corresponding to the depth information in such a manner that the one or more illumination sources (100a, 100b, 110, 120) emitting light radiation is or are moved in correlation with a location of at least one object displayed on the image display region (50).

22. A visual display system according to Claim 1, comprising a plurality of illumination sources (730) which are provided in an immovable manner, and wherein the monitoring means is adapted to generate image indicative signals corresponding to the depth information in such a manner that the plurality of illumination sources (730) are forced to

subsequently emit light radiation in a predetermined order to thereby mimic a motion in correlation with a location of at least one object displayed on the image display region (50).

23. A visual display system according to Claim 22, wherein the plurality of
5 illumination sources (730) are provided as a matrix-like array having rows (L1, ..., Ln) and columns (C1, ..., Cm).

24. A visual display system according to Claim 1, wherein the one or more
illumination sources (100, 100b, 110, 120; 730) is or are provided on a carrier substrate (605,
10 610, 615, 620; 705, 710, 715, 720).

25. A visual display system according to Claim 24, wherein the carrier substrate
(605, 610, 615, 620) is attached to the display device (40) in a pivotable manner.

15 26. A method of operating a supplementary visual display system (10, 200) for use in conjunction with a display device (40) including an image display region (50) for presenting images to a viewer (15), the method including the steps of:

(a) disposing one or more illumination sources (100a, 100b, 110, 120) in a configuration including at least one of:

20 (i) at least partially peripherally surrounding the image display region (50); and
(ii) arranged to project illumination radiated therefrom so as to illuminate a region visually appearing to the viewer (15) to at least partially peripherally surround the image display region (50);

(b) monitoring at least one of

25 (i) audio program content; and

(ii) intensity and/or color and/or depth information in the entire image display region (50) or in one or more sub-regions (300, 310, 320, 330) of the image display region (50) when images are presented thereon and generating corresponding image and/or audio indicative signals; and

30 (c) controlling light radiation emitted in use from the one or more illumination sources (100, 100b, 110, 120) in response to the image and/or audio indicative signals so as to provide at least a partial spatial extension of the image display region (50).